

1887

Edge Tools

### Engineering 91687-301. RAWLINSON'S GRINDSTONE.

THE improved grindstone (Rawlinson's patent), which we illustrate on page 298, is shown at the Manchester Exhibition by Messrs. Kendall and Gent, of Victoria Works, Salford, Manchester.

For some years past engineers have recognised the manifold advantages arising from the arrangement of having a slide rest attached to a grindstone for holding the tools while grinding. By this means the correct cutting angle for the tool can be easily obtained without exercising the skill and labour necessary for hand grinding. In workshops where numerous machine hands are employed, a great deal of their valuable time is frequently lost at the grindstone as well as keeping the machines standing still while their tools are being ground. This improvement in grindstones has been made specially to overcome this evil, by enabling one intelligent labourer to grind all the tools required by a large number of lathes and other machines. In the past a serious objection to the use of slide rests on grindstones has prevented their more general adoption, the drawback being that the sliding surfaces get very rapidly destroyed by the grinding action of the grit and water which lodges on them from the stone. This difficulty has been successfully overcome in this improved apparatus by entirely dispensing with the usual slide, and attaching the tool-holder and rest to the end of two long radius links which oscillate about a spindle placed underneath the trough, where it is well protected from grit. The necessary pressure is brought to bear on the tool by means of worms gearing into toothed quadrants on the radius links. Both of these worms are driven by bevel wheels from one handle placed in a convenient position

for the grinder. The tool-holder is of the usual type of revolving holders used on small lathes; it is mounted on a rectangular transverse bar, which is capable of being turned round. This arrangement allows of the tool being ground to the proper angle to suit the special work for which it is required. An index is provided for facilitating the correct setting of the tool. When set it can be locked in any desired position by tightening up a T-headed bolt fitting in an annular bolt groove.

The trough of the grindstone consists of a very substantial casting, which also serves the purpose of a frame for supporting the stone.

One of the great advantages arising from the system of rigidly holding the tools while grinding is that the stone always remains circular, and therefore does not require the frequent turning and truing that stones do with hand-grinding. In that case the softest part of the stone wears first, and consequently produces flats and hollows; this irregularity makes the operation of grinding both difficult and dangerous to the workman. Many have even lost fingers, and in some cases their hands, through the tools being drawn in between the stone and the hand rest on account of the tool catching in a soft place or hollow in the stone. Such an accident is quite impossible with this improved arrangement. These grindstones are made in all sizes up to 5 ft. in diameter, all of which are fitted with water-can and hood, also a three-speeded cone pulley with overhead gear.

We do not know of any workshop grindstones which are better finished and more conveniently arranged for rapidly doing first-class work at a trifling cost, than those which we have just described.

